

```

LLL      IIIIIIII   BBBB BBBB   RRRRRRRRRR   AAAAAAAAAA   RRRRRRRRRR
LLL      IIIIIIII   BBBB BBBB   RRRRRRRRRR   AAAAAAAAAA   RRRRRRRRRR
LLL      IIIIIIII   BBBB BBBB   RRRRRRRRRR   AAAAAAAAAA   RRRRRRRRRR
LLL      III       BBB         BBB   RRR         RRR   AAA         AAA   RRR         RRR
LLL      III       BBB         BBB   RRR         RRR   AAA         AAA   RRR         RRR
LLL      III       BBB         BBB   RRR         RRR   AAA         AAA   RRR         RRR
LLL      III       BBB         BBB   RRR         RRR   AAA         AAA   RRR         RRR
LLL      III       BBB         BBB   RRR         RRR   AAA         AAA   RRR         RRR
LLL      III       BBB         BBB   RRR         RRR   AAA         AAA   RRR         RRR
LLL      III       BBB         BBB   RRR         RRR   AAA         AAA   RRR         RRR
LLL      III       BBB         BBB   RRR         RRR   AAA         AAA   RRR         RRR
LLL      III       BBB         BBB   RRR         RRR   AAA         AAA   RRR         RRR
LLL      III       BBB         BBB   RRR         RRR   AAA         AAA   RRR         RRR
LLL      III       BBB         BBB   RRR         RRR   AAA         AAA   RRR         RRR
LLL      III       BBB         BBB   RRR         RRR   AAA         AAA   RRR         RRR
LLLLLLLLLLLLLLLLLL   IIIIIIII   BBBB BBBB   RRRRRRRRRR   AAAAAAAAAA   RRRRRRRRRR
LLLLLLLLLLLLLLLLLL   IIIIIIII   BBBB BBBB   RRRRRRRRRR   AAAAAAAAAA   RRRRRRRRRR
LLLLLLLLLLLLLLLLLL   IIIIIIII   BBBB BBBB   RRRRRRRRRR   AAAAAAAAAA   RRRRRRRRRR

```

[illegible]

[illegible]

| | | | | | |
|-----|----|-----|----------|--------------|----|
| MM | | MM | DDDDDDDD | LL | |
| MM | | MM | DDDDDDDD | LL | |
| MMM | | MMM | DD | DD | LL |
| MMM | | MMM | DD | DD | LL |
| MM | MM | MM | DD | DD | LL |
| MM | MM | MM | DD | DD | LL |
| MM | | MM | DD | DD | LL |
| MM | | MM | DD | DD | LL |
| MM | | MM | DD | DD | LL |
| MM | | MM | DD | DD | LL |
| MM | | MM | DD | DD | LL |
| MM | | MM | DD | DD | LL |
| MM | | MM | DD | DD | LL |
| MM | | MM | DDDDDDDD | LLLLLLLLLLLL | |
| MM | | MM | DDDDDDDD | LLLLLLLLLLLL | |

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Version 'V04-000'

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MODIFIED BY:

| | | | |
|---------|--|-------------------|-------------|
| V03-002 | MCN0145 | Maria del C. Nasr | 08-Feb-1984 |
| | Add DATA bit to indicate /DATA qualifier was specified. | | |
| V03-001 | JWT0056 | Jim Teague | 20-Sep-1982 |
| | Add structures for implementation of DCX data reduction and expansion. | | |
| V02-006 | RPG0046 | Bob Grosso | 25-Aug-1981 |
| | Turn on Update History | | |
| V02-005 | RPG0045 | Bob Grosso | 7-Aug-1981 |
| | Support /BEFORE and /SINCE | | |
| V02-004 | RPG0044 | Bob Grosso | 30-Jul-1981 |
| | Add KEEP flag. | | |
| V02-003 | RPG0041 | Bob Grosso | 8-May-1981 |
| | Add lhe\$w_modcnt | | |
| V02-002 | RPG0033 | Bob Grosso | 20-Apr-1981 |
| | Add lib\$s_history, lib\$s_recordluh, lib\$c_defluhrec, and lib\$c_cre_opt. Add structure LHE. | | |
| V02-001 | BLS0029 | Benn Schreiber | 23-Dec-1980 |
| | Add shareable image symbol table library | | |

\$STRUCT LIB


```
C
<LIB,$$_.
CLIBIT      :Spare bit--used by CLI
OBJECT      :Object library
MACRO       :Macro library
HELP        :Help text library
TEXT        :TEXT library
SHRSTB      :Shareable image symbol table library
COMPRESS    :Compress function
CREATE      :Create
DELETE      :Delete
EXTRACT     :Extract
INSERT      :Insert
LIST        :List
REMOVE      :Remove
REPLACE     :Replace
OUTPUT      :Output
NAMES       :Names
FULL        :Full listing
GLOBALS     :Globals
SELECTIVE   :Selective search
SQUEEZE     :Squeeze macro defs.
LIBOPEN     :Library file is open
OUTOPEN     :Output file is open
LOG         :Log operations on terminal
OLDLIB      :Library is old (VMS R1) format
CONVERT     :Issue cnvrting message in compress_lib
ADDRESS     :List module RFA also
ONLY        :List only selected modules
MODULE      :
CROSS       :Cross reference of object library
HISTORY     :List the history
RECORDLUH   :Opened library maintains a history
KEEP        :Keep user info and history across compress
BEFORE      :List entity predating
SINCE       :List entity postdating
DCX         :Reduce library with DCX
DATA        :Data qualifier found
>
V
<M
CLIBIT      :Spare bit--used by CLI
OBJECT      :Object library
MACRO       :Macro library
HELP        :Help text library
TEXT        :TEXT library
SHRSTB      :Shareable image symbol table library
COMPRESS    :Compress function
CREATE      :Create
DELETE      :Delete
EXTRACT     :Extract
INSERT      :Insert
LIST        :List
REMOVE      :Remove
REPLACE     :Replace
OUTPUT      :Output
NAMES       :Names
FULL        :Full listing
```

```

GLOBALS          ;Globals
SELECTIVE        ;Selective search
SQUEEZE          ;Squeeze macro defs.
LIBOPEN          ;Library is open
OUTOPEN          ;Output file is open
LOG              ;Log operations on terminal
OLDLIB           ;Old format library
CONVERT          ;Issue cnvrting message in compress_lib
ADDRESS          ;List module RFA also
ONLY             ;List only selected modules
MODULE           ;Cross reference of object library
CROSS            ;List the history
HISTORY          ;Opened library maintains a history
RECORDLUH        ;Keep user info and history across compress
KEEP             ;List entity predating
BEFORE           ;List entity postdating
SINCE            ;Reduce library with DCX
DCX              ;Data qualifier found
DATA
>
C <LIB,$$
  CRFBYSYM,      ;Cross reference by symbol
  CRFBYVAL,      ;Cross reference by value
  CRFBYMOD       ;Cross reference by module
>
V <M
  CRFBYSYM
  CRFBYVAL
  CRFBYMOD
>
C <
  DEFBLS,100     ;Number of blocks to allocate by default
  DEFGBL,512     ;Number of global symbols to allocate by default
  DEFMODS,128    ;Number of modules to allocate by default
  DEFLUHREC,20   ;Default maximum number of LUH records to save
  DEFVERTYP,3    ;Default library version type to create
  LISRECLNG,132  ;Length of listing file record
  SHORTSYM,15    ;Length of symbols in Help libraries
  SUBSYS,<134*65536> ;LIBRARIAN subsystem number (134)
  OPT_BLK,0      ;BLOCKS= option index number
  OPT_GBL,1      ;GLOBALS= option index number
  OPT_MOD,2      ;MODULES= option index number
  OPT_KSZ,3      ;KEYSIZE= option index number
  OPT_LUH,4      ;HISTORY= option index number
  OPT_VER,5      ;VERSION= option index number
  OPT_KEEP,6     ;KEEP option index number
  OPT_DCX,7      ;REDUCE option index number
>
V <M
  OPT_BLK        ;BLOCKS= option index number
  OPT_GBL        ;GLOBALS= option index number
  OPT_MOD        ;MODULES= option index number
  OPT_KSZ        ;KEYSIZE= option index number
  OPT_LUH        ;HISTORY= option index number
  OPT_VER        ;VERSION= option index number
  OPT_KEEP       ;KEEP option index number

```

```

      OPT_DCX          ;REDUCE option index number
    >
E
$STRUCT FDB
F      NXTFDB,L        ;Link to next FDB or 0 if end of list
F      FILFLGS,B       ;Flags for this file
V      <M
      SETSEL           ;Set selective search for this file
    >
F      ,B              ;Spare byte
F      IFI,W           ;IFI of file
F      DEFEXT,L        ;String descriptor for default extension
F      ,L,1
F      NAMDESC,L       ;String descriptor for file
F      ,L,1
F      MODNAM,L        ;String descriptor for /MODULE name
F      ,L,1
F      ,L,8            ;...
                        ;Spares
                        ;NAM block and resultant string follow
                        ;*NOTE* must be longword aligned
F      NAM,T,0         ;Start of NAM block
L      SIZE            ;Size of local part of FDB
E

$STRUCT LNB
F      FLINK,L         ;Link word forward
F      BLINK,L         ;Link backwards
F      FLAGS,B         ;Flags
V      <
      REPLACE          ;Replace rather than insert symbol
    >
F      NAMLNG,B        ;Length of name
F      NAME,T,0        ;Start of name
L      FIXEDSIZE       ;Length of fixed part of library name block
E

$STRUCT MNB
F      NEXT,L          ;Link to next module name block
F      SYMBOLS,L       ;Link to symbol list
F      NAMLNG,B        ;Length of module name
F      NAME,T,0        ;Start of name
L      FIXEDSIZE       ;Length of fixed part of module name block
E

$STRUCT SNB
F      NEXT,L          ;Link to next symbol name block
F      VALUE,L         ;Value of symbol
F      FLAGS,W         ;Symbol flags
F      NAMLNG,B        ;Length of symbol name
F      NAME,T,0        ;Start of name
L      FIXEDSIZE       ;Length of fixed part of symbol name block

```


E

\$STRUCT LHE

| | | |
|---|-------------|----------------------------|
| F | TIME,L | ;Time of modification |
| F | ,L,1 | |
| F | MODCNT,W | ;count of module names |
| F | MODCODE,B | ;code for the modification |
| C | < | |
| | DELETED,1 | |
| | INSERTED,2 | |
| | REPLACED,3 | |
| | > | |
| F | USRNAMLEN,B | ;length of the username |
| F | USRNAM,T,12 | ;username |
| L | FIXEDSIZE | |
| E | | |

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AH-BT13A-SE
 VAX/VMS V4.0

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